DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
X	X	X	X	X	X

REGISTERED CIVIL ENGINEER   X
DATE

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
No. X
Exp. X
CIVIL
STATE OF CALIFORNIA

CLASS F COLUMN

GAP: 2" Min, 4" Max
PCC COLUMN
TEMPORARY LIFTING EARS (OPTIONAL) TO BE REMOVED AND GROUND SMOOTH AFTER INSTALLATION, Typ
STEEL CASING
WELDED JOINT SEE "DETAIL C"
2"
FG
LIMITS OF WATERPROOFING SEE NOTE 7
2"
SEAL FOR GROUTING. GROUT AT 2" GAP MAY EXTEND TO OUTER FACE OF STEEL CASING

CLASS P/F COLUMN

GAP: 2" Min, 4" Max
STEEL CASING
LIMITS OF POLYETHYLENE TO BE SHOWN ON PLANS
WELDED JOINT SEE "DETAIL C"
FG
2"
SEAL FOR GROUTING. GROUT AT 2" GAP MAY EXTEND TO OUTERFACE OF STEEL CASING

ELLIPTICAL CASING DETAIL CLASS F AND P/F COLUMN

POINT OF COMPOUND CURVE
R1
CENTER OF CURVE
R2
CENTER OF CURVE

RADII R1 AND R2 TO BE DETERMINED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ENGINEER

DETAIL C

CL VERTICAL WELDED JOINT
FRONT PANEL / BACK PANEL
STEEL CASING, Typ
TOP PANEL
WELD BACKING BAR
CL HORIZONTAL WELDED JOINT
BOTTOM PANEL
Typ
Typ
M   Typ
WELD BACKING BAR TO LOWER PANEL ONLY
DRILL 1" Ø HOLE THRU INTERSECTION OF JOINT, FOR MORE THAN 2 WELD INTERSECTION DRILL 2" Ø HOLE
M

(TWO WELD INTERSECTION JOINT)

SECTION A-A

PCC COLUMN
GROUTED GAP
BACKING PLATE
STEEL CASING
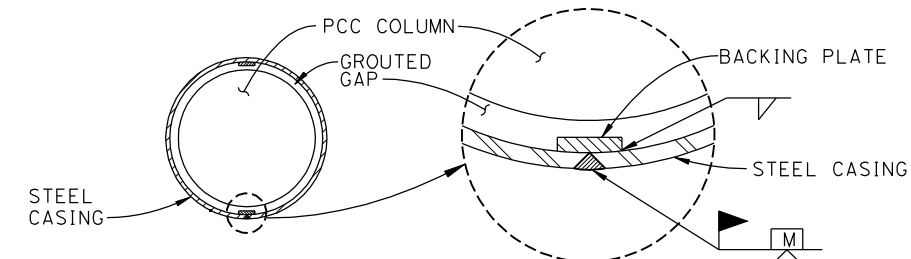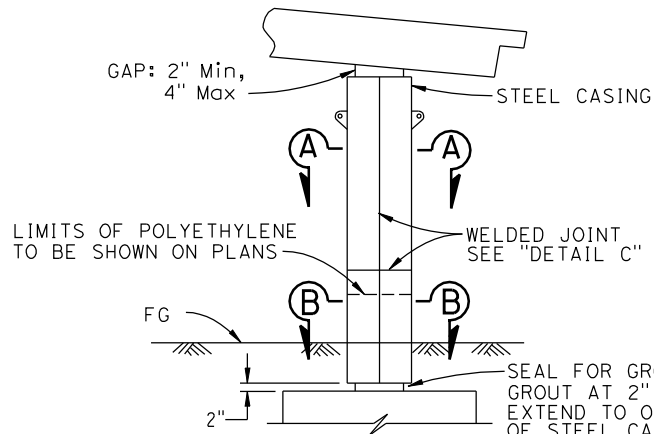STEEL CASING
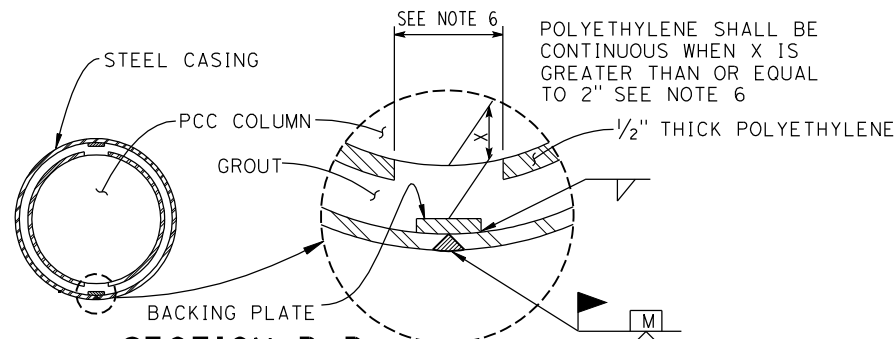
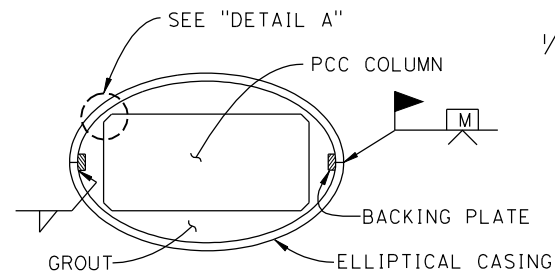MINIMUM INSIDE DIAMETER OF STEEL CASING = 1½" GREATER THAN NOMINAL COLUMN DIAMETER FOR CLASS F AND 2½" FOR CLASS P/F

ROUND COLUMN

SECTION B-B
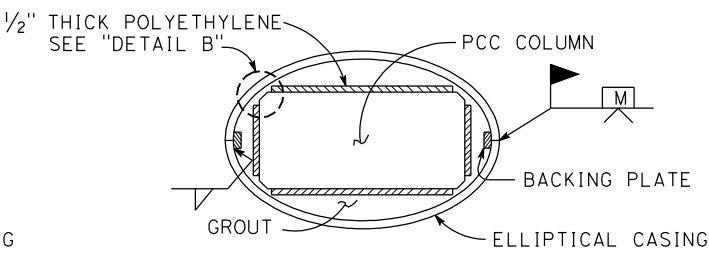
STEEL CASING
PCC COLUMN
GROUT
SEE NOTE 6
½" THICK POLYETHYLENE
POLYETHYLENE SHALL BE CONTINUOUS WHEN X IS GREATER THAN OR EQUAL TO 2" SEE NOTE 6
BACKING PLATE
M

MINIMUM INSIDE DIAMETER OF STEEL CASING = 2½" GREATER THAN NOMINAL COLUMN DIAMETER FOR CLASS P/F

SECTION A-A

SEE "DETAIL A"
PCC COLUMN
BACKING PLATE
GROUT
ELLIPTICAL CASING
M

SECTION B-B

½" THICK POLYETHYLENE SEE "DETAIL B"
PCC COLUMN
BACKING PLATE
GROUT
2"
ELLIPTICAL CASING
M

RECTANGULAR COLUMN

DETAIL A

1" Min @ CHAMFERED CORNER

DETAIL B

1" Min @ CHAMFERED CORNER AND @ POLYETHYLENE

CASING OPENING

OPENING REINFORCEMENT SHALL BE THE SAME THICKNESS AS THE STEEL CASING UP TO MAXIMUM ½" THICK
X
DRAIN OR UTILITY OPENING, SEE NOTE 8
OUTER FACE OF STEEL CASING
D+¼"
X
D = PIPE EXTENSION OUTSIDE DIAMETER

ELEVATION

INNER FACE OF STEEL CASING
D
D
3D
2" Max
WATER TIGHT ALL-AROUND

SECTION X-X
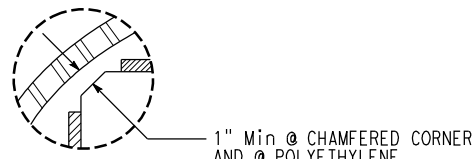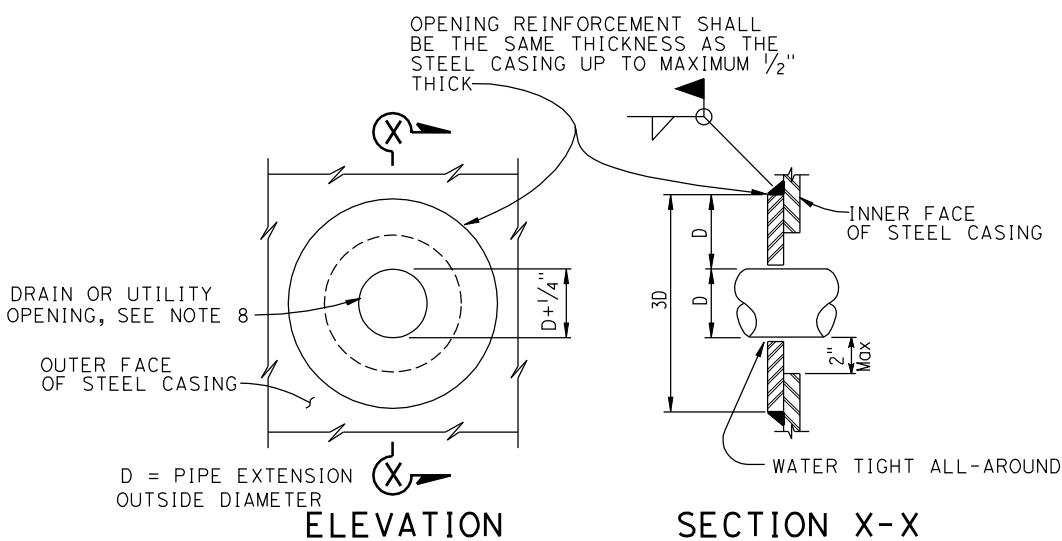
NOTE: OPENING REINFORCEMENT REQUIRED FOR DRAIN OR UTILITY OPENINGS LARGER THAN 4"

NOTES:

1. For varying thickness, steel casing inside surface to remain flush. Minimum clearance from PCC column to casing shall be maintained

2. Appropriate injection nozzles to be provided on casing, but removed and ground flush following completion of grouting operation

3. All voids between steel casing and polyethylene (Class P/F), and steel casing and PCC column (Class F) to be filled with grout

4. Location and number of vertical and horizontal welds to be determined by the Contractor and subject to the approval of the Engineer. The location of casing welds are for illustration. No skip welds allowed

5. Circular steel casing to be ¼" thick minimum for casings with a 4'-4" diameter or less; all other steel casings to be ⅜" thick unless noted differently on contract plans. Backing plates to be the same thickness as casing up to maximum ⅜" thick

6. Contractor shall remove 12" polyethylene strip behind backing plate if backing plate is closer than 2" from face of column

7. Waterproof limits for steel casings. Typical for Class "F" and "P/F"

8. For pipe extensions, opening shall be no more than ¼" greater than the pipe extension diameter. For other openings, the opening diameter to be determined by the Engineer

NO SCALE

STANDARD DRAWING
FILE NO. xs7-010
APPROVAL DATE July 2011

DS-OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.
X
POST MILE
X

X

COLUMN CASING - STEEL

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

UNIT: X
PROJECT NUMBER & PHASE: X
CONTRACT NO.: X
FILE => $REQUEST

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET   OF
X   X

TIME PLOTTED => $TIME   DATE PLOTTED => $DATE   USERNAME => $USER